

# Training the Workers Who Are Unable to Fight

SHIPLOADS of supplies are daily leaving American ports to provide men in battle with their arms, with their engines of every character and denomination for the great operations, with their hand tools or the details of construction and destruction, and with their physical needs in the way of textiles and food. As a matter of actual calculation, it takes just six tons of shipping a year to transport one man and his supplies to the other side.

To provide these necessary supplies means labor, and today every thinking man and woman has come to a realization of the fact that the conversion of labor from peace-time standards to the production of war essentials is one of the greatest factors in the current program. It means that labor is running shoulder to shoulder with the fighting machine and cannot lag for a moment without causing untold loss on the battlefield. It has been estimated that the Ordnance department will require between 600,000 and 1,000,000 trained workers by February. How are these skilled workers to be obtained?

While means for speeding the war labor engine have been many, one very effectual and effective agency in inspiring efficiency has been the training departments created throughout the country in connection with a number of the establishments producing war materials. The object of these "vestibule" schools is to train skilled workers for the performance of some definite task by means of short intensive courses. Their mission is purely emergency, and in their very nature and character they are qualified to maintain the integrity of labor for the benefit of the mechanics who have left their benches for the battle line.

At the same time these training schools stand for the opportunity for the man too old, or the man physically disqualified, to fight; they give him a chance to adapt his line from non-essential to an essential industry, as well as the boy under eighteen to do his war bit, also the woman with the desire to put her hand to the war machine at home in the place of her man, whom she has sent to the front to fight in her behalf.

Today the 150 training departments, operating in connection with many establishments, represent one phase of labor's adaptation to



GIRL OF TWENTY ACTING AS ASSISTANT INSPECTOR OF GAUGES.

overcomes fear of factory life in women not accustomed to factories. It inculcates the best spirit, for instruction includes the development of war spirit, speed and accuracy, which must be given in an atmosphere surcharged with these virtues.

The second form of training is for difficult but "repeat" operations, where the operator performs a single operation or a single series, as on a turret lathe, again and again. It is here that remarkable success is quickly attained through a training department, as has been proved wherever tried with judgment. The third type of training teaches processes instead of repeat operations, and a training department is necessary for the best accomplishment with large numbers.

When the war began it was believed that a man or woman wholly unfamiliar with machine shop practice could not quickly be trained for operations of the greatest precision in non-

er satisfactorily by means of their training departments.

Never was Oserian theory more convincingly refuted than it is today, with the draft limit set at forty-five, and men by the hundreds past "the chloroforming period" are rendering as valuable service as any in war production by means of training. At a vestibule school in New Haven, Conn., a painter, aged sixty, quickly learned to be an adept. Said the superintendent of a factory in Worcester, which has one of the best training departments in the country: "I recently hired a man sixty-three years of age, who had been a pattern maker, a millwright and a stone mason. He came to me and said that he had a hankering to learn the machinist trade. We put him to work in the training department and he is showing wonderful progress. His training in those other lines have given him a good course in mechanical work, and we believe that in a short period we can make a first-class instructor out of him."

Another man of about sixty-eight, formerly a farmer, who had had mechanical training in his youth, walked into the training department of a war factory the other day and quickly qualified for skilled production. A Cincinnati firm, finding it difficult to procure boys, has substituted old men with great success. They find the mature men dependable and ready to accept responsibility, never absent, never late and glad, most of them, to have obtained steady employment at good wages in a high-class institution. Incidentally, a period of training has made them the equal of younger men in the performance of their own particular task.

In Bridgeport a laundry shirt ironer over forty-five years of age, after three days of training, was running a screw machine and producing 25 per cent faster than estimated by the maker of the machine. At the end of a week he was receiving 60 cents an hour in regular production. An enameiler of the same age was doing as well on a companion machine in the same training room, but he stayed a month in training so as to qualify as foreman in a screw machine room.

So much for the men over the new draft age. The boys under eighteen are also receiving their share of training to do their part in the war emergency. The Boardman apprentice shops, under which name New Haven, Conn., operates a trade school, is doing its share toward meeting the shortage of skilled and semi-skilled help. This training school teaches many trades under actual work conditions. The machine trains fifty boys in the day course, and under normal conditions the boy graduates after 4,800 hours of study, 75 per cent being trade practice and 25 per cent being academic study. At present many boys leave before the completion of their course to enter local munition

factories. These boys are in great demand and even after a few months of training are found very useful in the factories. The boys who complete their studies and receive their diplomas are largely sought for toolroom work.

The boys in this school work eight hours a day, forty-four hours a week, fifty weeks a year, and produce real machinery, practically all of which goes into the munition plants. One lot of forty-five horizontal tappers was recently built, boxed and ready for shipment to Glasgow for use on British Munitions. The boys build two sizes of screw slotting machines, lathes, slide rests, drill press vices and hundreds of small cutters. They have built and shipped about six hundred machines, not including slide rests and vices. Thus, the school, while following its basic plan, is supplying the country's vital needs in training boys and at the same time making an essential product.

The Blanchard Machine Tool Company of Cambridge, Mass., describes work done to its satisfaction by the "green" operatives who have undergone the short intensive course in its training department. They are employing a man sixty-three years old in the assembly of their caliper device used in connection with their high power vertical surface grinder, for fine measurements on parts being surface ground. He is a shoemaker by trade and has been on this work since June 27, this year. In that time he has learned to assemble completely these delicate instruments, making the proper adjustments, lapping and doing a quality of work that passes rigid inspection.

This firm employs a number of women who have used its training department as an entrance to the factory. A young woman is used for a thread-cutting operation on a feed screw for a surface grinder, which is made from 40 carbon steel, is twenty-six and one-half inches long and has a one-fourth-inch pitch acme thread about two-thirds of its length that must be a close fit in a bronze unit. This young woman has been on this class of work since last May and she is able to take the screws from the rough stock and turn them to grinding size and finally finish cutting the thread in a time less than was formerly taken by skilled machinists. This is the most remarkable job done by a woman in this shop and requires unusual skill.

Another woman in this shop who had no previous experience in lathes and went to work in June of this year is employed by this company for finish turning of steel bevel gears to accurate dimensions. She uses a compound slide and produces a quality of work that will pass the most critical inspection. Twenty women are employed in jig drilling, using a 20-inch upright drill. These operatives from the training department have been able to reach the

speed attained by men of long experience in this work. The office of assistant inspector with this firm has been filled since April last by a girl of twenty. While she does not understand all the technical phrases and processes used in connection with the work, there is a very large percentage which is merely routine, and if it does not pass the gauges provided for she refers it to the chief inspector. By this means a man has been released for productive work.

Women are earning high wages for the skilled work of the class mentioned. Four girls trained to do difficult work in the vestibule school on going into the shop earned an average of \$7 the first day, \$8 the second day, \$9 the third and a little later \$11. The production of the training department worker is said to be between 25 and 33 per cent greater than that of the untrained man or woman, and the test of its satisfactory operation for employer and employee is evidenced by the fact that of those who enter the factories through their training departments only 2 or 3 per cent leave. Credit for a considerable degree of this mutual content is undoubtedly due to the comfort and welfare agencies, which have been instituted in the training departments and the factories for the especial benefit of the woman workers.

That a deep interest is being taken in the training of workers for essential war industries was recently demonstrated by the offer of the Chicago board of education of the use of a vacant school building splendidly adapted for factory and machine training. This tender was supplemented by the board's voting \$10,000 as a preliminary fund toward the expense of equipping the building. A number of employers, under the leadership of an expert works manager, are now outfitting the complete equipment of the building.

England and France are giving special attention to training their older men who have been merchants, professional men, etc., for skilled production.

## FARM WORK IN TUNE WITH FREEDOM'S GUNS

THIS is the story of how one farmer, hampered by poor help and a difficult labor situation, tied his business in with war needs and won out. Milking cows and pitching hay for so many dollars a month are dull jobs, but milking cows and pitching hay to win the war are altogether different propositions.

This farmer lives not many miles from a large city and from several Army cantonments. His dairy supplies milk for the Army. He has found his output continually hampered by the "turnover" of his labor.

Many agricultural laborers are in the habit of shifting their jobs. Some do not like to stay long in one place. Others may work a few months and then go to the city, spend what they earned and look for work somewhere else. All these considerations make for a waste of time at critical hours, a waste in breaking in new men and a big waste in lack of interest in the work.

It struck this young farmer that it would be good business for himself and the country if he could minimize this loss.

One hot evening not many months ago, while the men were lounging under the trees, the owner of the farm got his talking machine out on the porch and fed it "Over There" and "Good-bye, Broadway, Hello France!" Questions followed and presently the farmer found himself talking to his men about the war. He began to tell them of the western front and the difference between the Hindenburg and the Foch method of attack. The men seldom read newspapers, so he conceived the idea of a bulletin board news poster. Upon it he pasted typewritten abstracts of the day's war and sporting news, the happenings of the farm and short editorials having to do with both local and patriotic subjects.

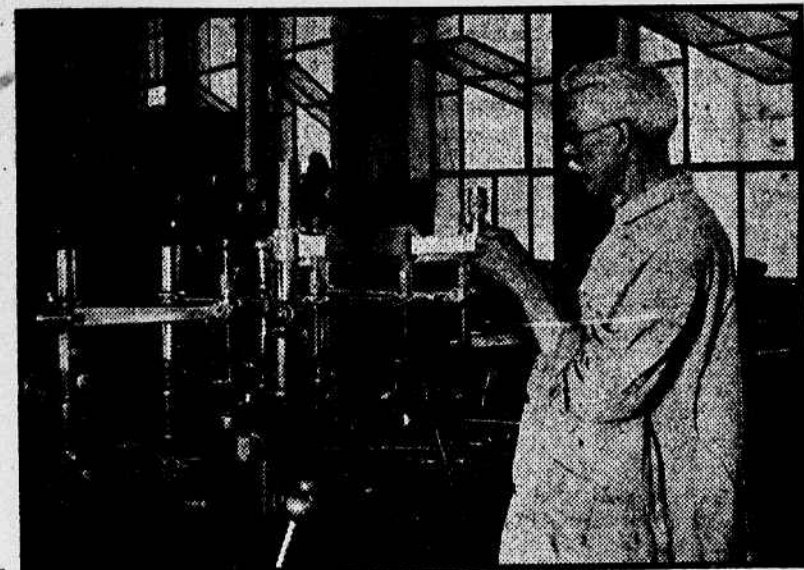
Once a week now he holds his open-air forum. Sometimes he talks to the men himself. The milk from the farm goes to engineers and to marines at their respective camps. It is a vital food, especially in the hospital. He drills into his force this fact—that if a man cannot get into a uniform himself, he can fight the Hun by feeding the men who can.

One of the farm workers had been an aviator who was injured in service. He told the farm family at weekly meetings about "hedge hops" and "spiral dips." A Canadian from one of the camps came down and related his experiences at the front. Men from other war work tell the story of what they are trying to do.

Then the farm owner began to experiment still further. At the end of the month he turned over to each man over and above his wages a five-dollar war savings stamp as his part of the farm profits. He explained that only by close co-operation could the venture be made a success. He got the dairy inspector to pick the best kept sections of the barn and gave additional prizes to the men in charge of them. He offered premiums for ideas showing how the work could be done better or in less time.

The men woke up to an interest in the farm. Most of them had lived from hand to mouth all their lives. They began to invest in war savings stamps. Some of them started savings accounts. They crowded around each new bulletin to see what the allies were doing in the big battle of northern France.

The result is amazing. The farm activities have speeded up to war-time efficiency. Instead of "chucking" their jobs at the end of a month or two the men feel that they are a part of the farm family. They see that no part of the farm work can be neglected without dragging on the whole. Whether a man raises feed or milks cows or gets the milk to market, he cannot get lazy without handicapping the whole outfit.



THIS MAN, SIXTY-THREE YEARS OF AGE, FORMERLY A SHOEMAKER, WAS TRAINED TO ASSEMBLE CALIPER DEVICE FOR FINE MEASUREMENTS.

the war need, their peculiar function being that, while they familiarize their pupils with one or two essential processes, and the war machine is by that measure of efficiency speeded to full production in quantity, the permanent labor situation remains stable, so far as the trained all-round mechanic is concerned. In peace the skilled mechanic may acquire proficiency in many branches of his own trade; with war's necessity for intensified production has come the emergency need for experts in the manufacture of single parts, or for skill in a single series of processes in order to expedite quantity production.

The idea of establishing schools for unskilled labor for the war emergency found its inception in the advisory commission of the Council of National Defense, in the national subcommittee on welfare work of its committee on labor. Samuel Gompers is chairman of that committee, and he early foresaw the need of definite training agencies for unskilled labor. The section of his committee which has been mainly responsible for the development of the plan is known as the section on industrial training for war emergency, with H. E. Miles as chairman. The Department of Labor has recently established a training and dilution service, with Charles T. Clayton as director and Mr. Miles as chief of training. This connects the work started in the Council of National Defense, which from its nature is mainly advisory, with a government department with executive power.

Three types of training are given in the schools of industrial establishments. Many machine operations are very simple, and can be taught an intelligent person in a few minutes or a few hours at a machine or bench. The value of the training department in such a case of simple repetitional work lies in the fact that it teaches the new worker the best and quickest ways of doing his or her task, instead of letting them acquire by imitation the habits of the next worker, which may be good, bad or indifferent, may be wasteful of material or conducive to the dissipation of the employee's time and strength. It also



BOYS BELOW THE DRAFT AGE BEING TRAINED AS EXPERT MECHANICS ON WAR WORK.